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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/751,141

12/31/2003

Fernando Gonzalez

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1749

7590

07/14/2005

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EXAMINER

NGUYEN, JOSEPH H

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/751,141	Applicant(s) GONZALEZ ET AL.	
	Examiner Joseph Nguyen	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2005.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-25 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 12-25 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 12 is rejected under 35 U.S.C. 102(e) as being anticipated by Michejda et al.

Regarding claim 12, Michejda et al. discloses on figure 1A a transistor comprising a drain terminal 178 comprising a doped polysilicon material (para [0034], lines 5-6 and para [0058]) disposed within a first shallow cavity formed in an isolation oxide region 150 (para [0033], lines 4); a source terminal 178 comprising a polysilicon material disposed within a second shallow cavity formed in the isolation oxide region; a channel 130 (para [0033], line 3) formed in a silicon material and arranged between each of the first shallow cavity and the second shallow cavity, wherein the channel comprises a respective doped region (para [0042]) coupled to each of the drain terminal and the source terminal; and a gate 120 (para [0032], line 2) disposed over the channel and comprising one conductive layer disposed over a gate oxide layer 122 (para [0032], lines 4-5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17, 18 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Michejda et al. in view of Tsuchiaki.

Regarding claim 17, Michejda et al. discloses on figure 1 substantially all the structure set forth in the claimed invention (see rejection of claim 12) except a storage device. However, Tschuchiaki teaches a storage device connected to a transistor (col. 1, lines 59-64). In view of such teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Michejda et al. by having a storage device connected to a transistor for the purpose of utilizing the improved transistor in a memory cell.

Regarding claim 18, Tsuchiak teaches that the storage device comprises a capacitor (col. 1, lines 59-64).

Regarding claim 22, Michejda et al. discloses on figure 1 substantially all the structure set forth in the claimed invention except a memory device coupled to the processor and comprising a storage device. However, Tschuchiaki teaches a memory device coupled to the processor (col.1, lines 42-45) and comprising a storage device (col. 1, lines 59-64). In view of such teaching, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to modify Michejda et al. by having a memory device coupled to the processor and comprising a storage device for the purpose of utilizing the improved transistor in an integrated system in a single chip microcomputer.

Claims 13-15, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Michejda et al. as applied to claim 12 above.

Regarding claim 13, Michejda et al. discloses on figure 1 substantially all the structure set forth in the claimed invention except each of the plurality of cavities comprising a depth in the range of approximately 300A to 1500A. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Michejda et al. by having each of the plurality of cavities comprising a depth in the range of approximately 300A to 1500A, since it has been held that where the general conditions of a claim are disclosed in the prior art discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 14, Michejda et al. discloses on figure 1 substantially all the structure set forth in the claimed invention except each of the plurality of cavities comprising an aspect ratio of less than or equal to approximately 0.5 to 10. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Michejda et al. by having each of the plurality of cavities comprising an aspect ratio of less than or equal to approximately 0.5 to 10, since it has been held that where the general conditions of a claim are disclosed in the prior art discovering the

optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 15, Michejda et al. discloses on figure 1 substantially all the structure set forth in the claimed invention except each of the plurality of cavities comprising an aspect ratio of less than or equal to approximately 1 to 3. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Michejda et al. by having each of the plurality of cavities comprising an aspect ratio of less than or equal to approximately 1 to 3, since it has been held that where the general conditions of a claim are disclosed in the prior art discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 16, Michejda et al. discloses on figure 1 substantially all the structure set forth in the claimed invention except each of the first and second conductive posts coupled to the respective drain and source terminals at a distance from the gate being greater than 50% of the width of the respective drain and source terminals. However, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify Michejda et al. by having each of the first and second conductive posts coupled to the respective drain and source terminals at a distance from the gate being greater than 50% of the width of the respective drain and source terminals, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 19-21, 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Michejda et al. and Tsuchiaki as applied to claims 17 and 22 above.

Regarding claims 19 and 23, Michejda et al. and Tsuchiaki discloses on figure 1 substantially all the structure set forth in the claimed invention except each of the plurality of cavities comprising a depth in the range of approximately 300A to 1500A. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Michejda et al. and Tsuchiaki by having each of the plurality of cavities comprising a depth in the range of approximately 300A to 1500A, since it has been held that where the general conditions of a claim are disclosed in the prior art discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claims 20 and 24, Michejda et al. and Tsuchiaki substantially all the structure set forth in the claimed invention except each of the plurality of cavities comprising an aspect ratio of less than or equal to approximately 0.5 to 10. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Michejda et al. and Tsuchiaki by having each of the plurality of cavities comprising an aspect ratio of less than or equal to approximately 0.5 to 10, since it has been held that where the general conditions of a claim are disclosed in the prior art discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claims 21 and 25, Michejda et al. and Tsuchiaki disclose substantially all the structure set forth in the claimed invention except each of the plurality of cavities comprising an aspect ratio of less than or equal to approximately 1 to 3. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Michejda et al. and Tsuchiaki by having each of the plurality of cavities comprising an aspect ratio of less than or equal to approximately 1 to 3, since it has been held that where the general conditions of a claim are disclosed in the prior art discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Response to Arguments

Applicant's arguments filed on 05/19/2005 have been fully considered but they are not persuasive.

With respect to claim 12, applicant argues Michejda et al. does not disclose a drain terminal and a source terminal disposed within shallow cavities, which are formed in an isolation oxide region. However, Michejda et al. clearly discloses on figure 1A a drain terminal and a source terminal 178 disposed within shallow cavities, which are formed in the isolation oxide region 150 (para [0033], lines 5-7). Therefore, Michejda et al. discloses all the structure set forth in claim 12 herein.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

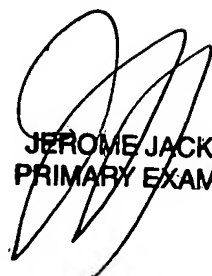
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Nguyen whose telephone number is (571) 272-1734. The examiner can normally be reached on Monday-Friday, 7:30 am- 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JN
July 7, 2005


JEROME JACKSON
PRIMARY EXAMINER